

ABSTRACT

A semiconductor chip assembly includes a chip carrier having a dielectric layer and electrically-conductive terminals in the form of projecting bumps formed integrally with traces on the dielectric layer. The bumps have convex surfaces and desirably are hollow and deformable. The convex bottom ends of the bumps may be bonded to the contact pads on the surfaces of a circuit panel by a small amount of solder or other bonding material. The structure provides a sound joint between the contact pads and the bumps and avoids the need for relatively large solder balls. The assembly can be made using techniques well-integrated with conventional surface-mounting techniques.

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